



Systems Operation

Fluid Power and Electrical Graphic Symbols

CONTENT***Fluid Power and Electrical Graphic Symbols - Media Number -SENR3981-04***

Fluid Power Graphic Symbols 01/08/2008

Line Identification 01/08/2008

Valve Envelopes 01/08/2008

Fluid Storage Reservoirs 01/08/2008

Techniques For Crossing and Joining Lines 01/08/2008

Valve Ports 01/08/2008

Fluid Conditioners 01/08/2008

Basic Component Symbols 01/08/2008

Supplemental Component Symbols 01/08/2008

Pilot Control Symbols 01/08/2008

Manual Control Symbols 01/08/2008

Accumulators 01/08/2008

Combination Controls 01/08/2008

Electrical Controls 01/08/2008

Miscellaneous Controls 01/08/2008

Hydraulic, Pneumatic Cylinders 01/08/2008

Hydraulic Pumps 01/08/2008

Hydraulic Motors 01/08/2008

Shutoff Valves 01/08/2008

One-Way Check Valves 01/08/2008

Internal Passageways 01/08/2008

Pressure Differential Valve 01/08/2008

Control Valves 01/08/2008

Simple Single Function Circuit 01/08/2008

Electrical Power Graphic Symbols 01/08/2008

Basic Component Symbols 01/08/2008

Switches 01/08/2008

Resistors 01/08/2008

Wire Coloring 01/08/2008

Wire Identification 01/08/2008

Components 01/08/2008

Connectors 01/08/2008

Splices 01/08/2008

◀ Product: 5''
Model: 5''
Configuration: 5''
MACHINE / ENGINE

Systems Operation

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Media Number -SENR3981-04

Publication Date -01/08/2008

Date Updated -12/08/2008


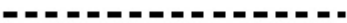




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Fluid Power Graphic Symbols

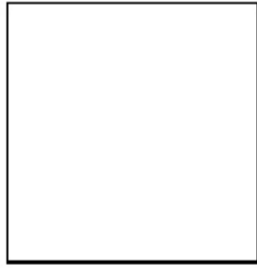
SMCS - 5050

Note: Use this module as a basic reference guide for graphic symbols. Do not use this module as a comprehensive reference guide.

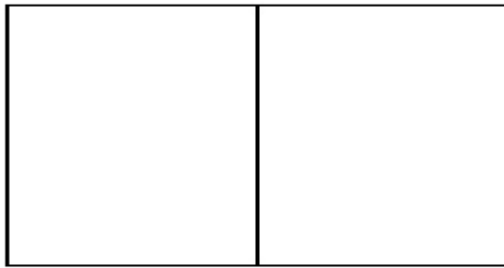
Line Identification

	A
	B
	C
	D
	E
	F

Valve Envelopes



G



H



J

Illustration 2

g01345717

(G) One position

(H) Two-position

(J) Three-position

Fluid Storage Reservoirs

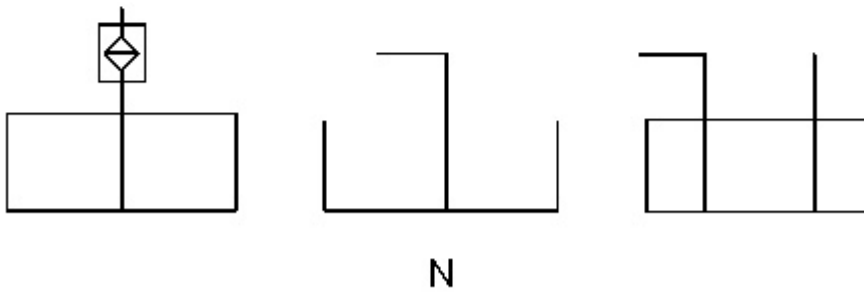
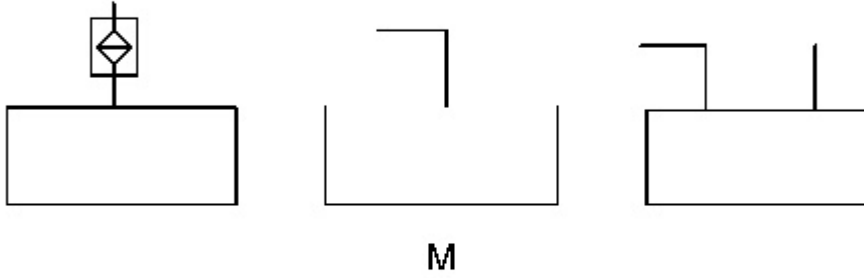
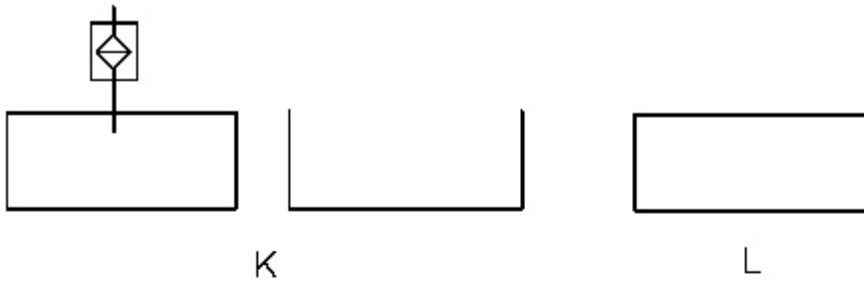


Illustration 3

g01345911

(K) Vented

(L) Pressurized

(M) Return above fluid level

(N) Return below fluid level

Techniques For Crossing and Joining Lines

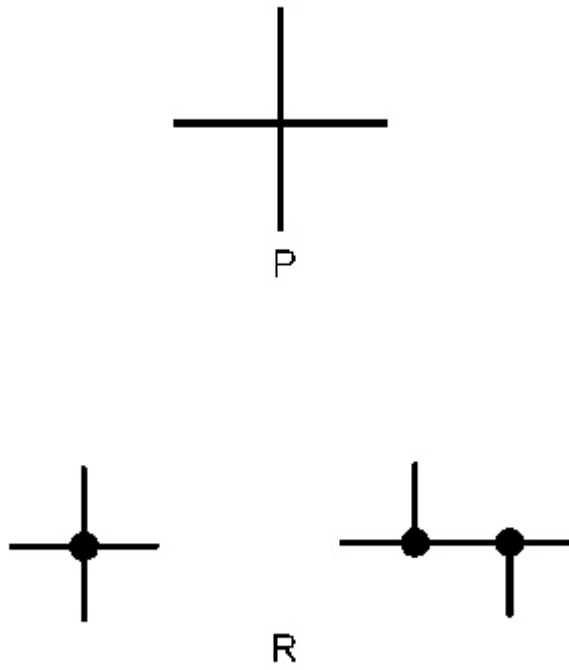


Illustration 4

g01819313

(P) Line crossing

(R) Lines joining

Valve Ports

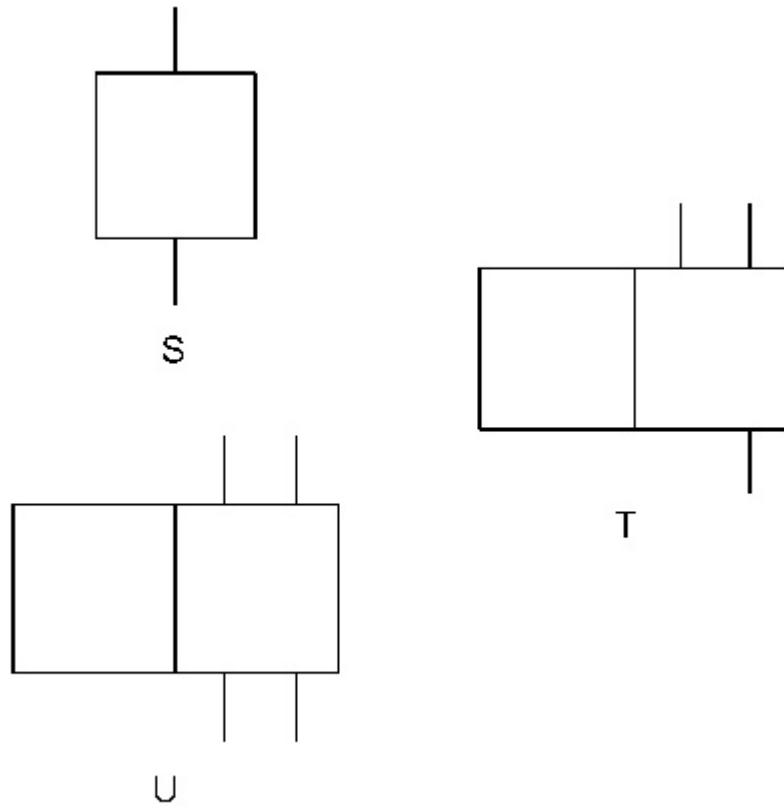


Illustration 5

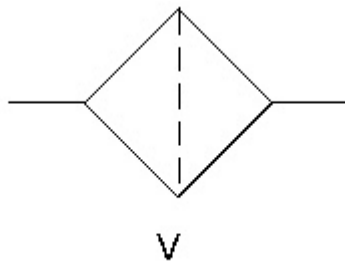
g01353004

(S) Two-way

(T) Three-way

(U) Four way

Fluid Conditioners



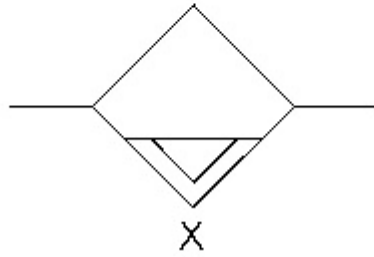
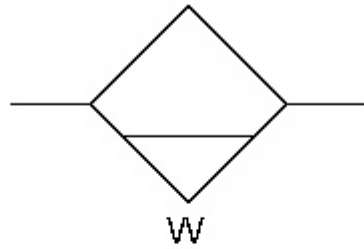


Illustration 7

g01386985

Separators

(W) Manual drain

(X) Automatic drain

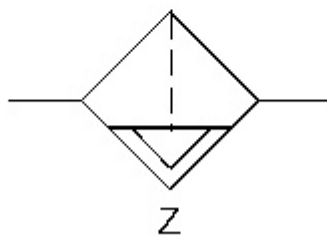
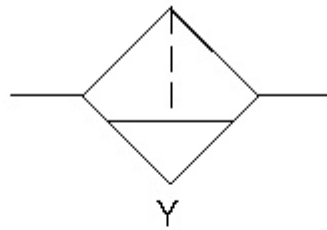


Illustration 8

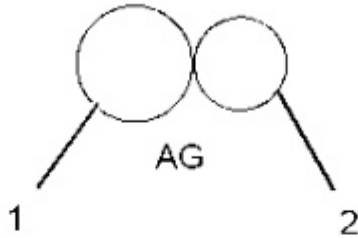
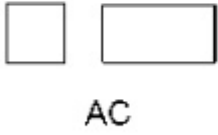
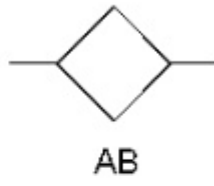
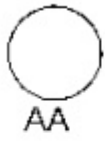
g01386986

Filter separators

(Y) Manual drain

(Z) Automatic drain

Basic Component Symbols



(AH) Adjustable spring

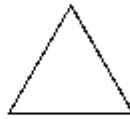
(AJ) Line restriction (variable)

(AK) Variability

Supplemental Component Symbols



AL



AM

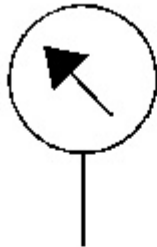
Illustration 10

g01819393

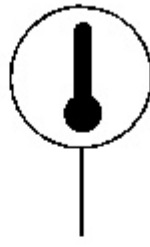
Energy triangles

(AL) Hydraulic

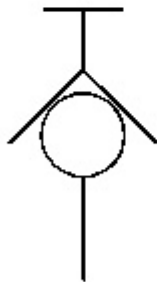
(AM) Pneumatic



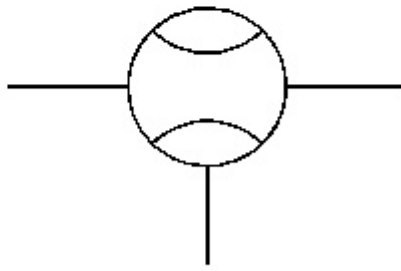
AN



AP



AR



AS

Measurement

(AN) Pressure

(AP) Temperature

(AR) Pressure tap

(AS) Flow

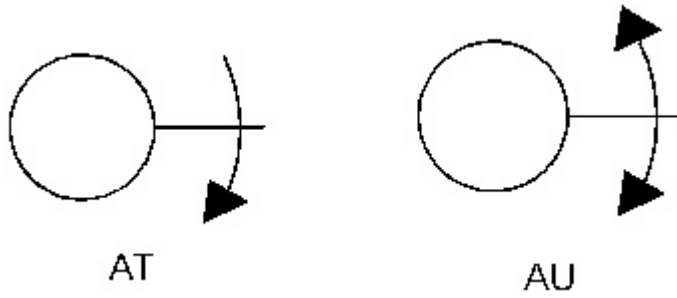


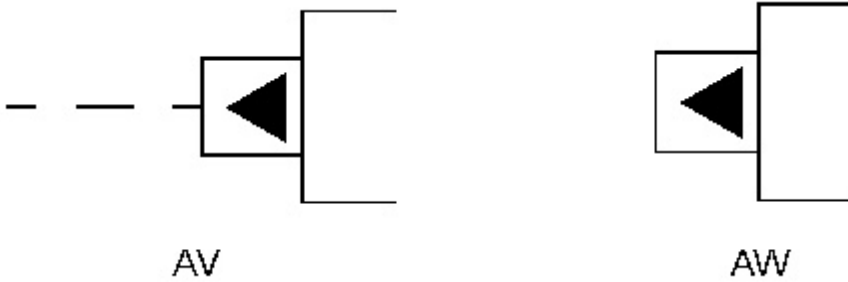
Illustration 12

g01819434

(AT) Unidirectional

(AU) Bidirectional

Pilot Control Symbols



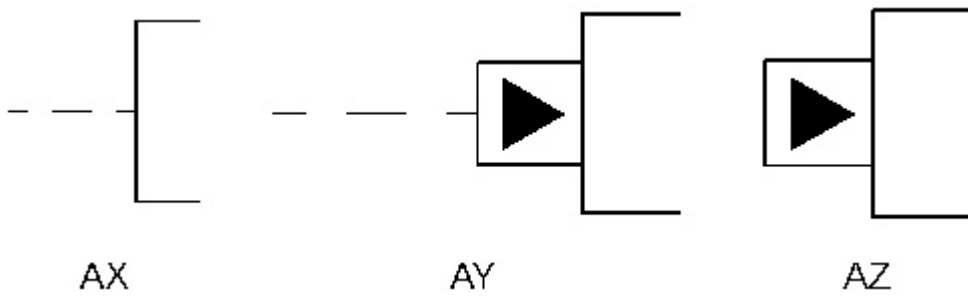


Illustration 14

g01820235

Remote supply pressure

(AX) Simplified

(AY) Complete

(AZ) Internal pressure supply

Manual Control Symbols

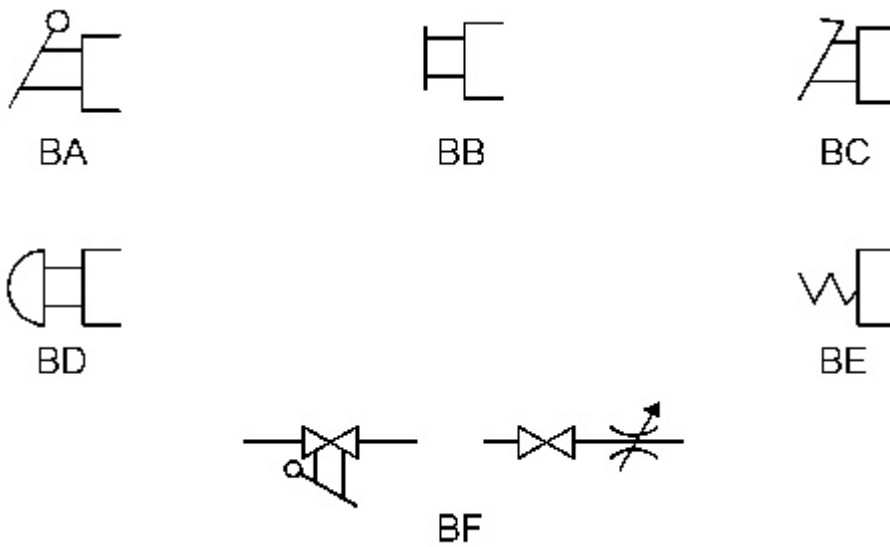


Illustration 15

g01820255

(BA) Push-pull lever

(BB) General manual

(BC) Pedal

(BD) Push button

(BE) Spring

(BF) Manual shutoff

Accumulators

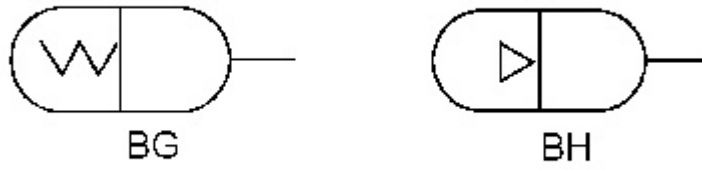


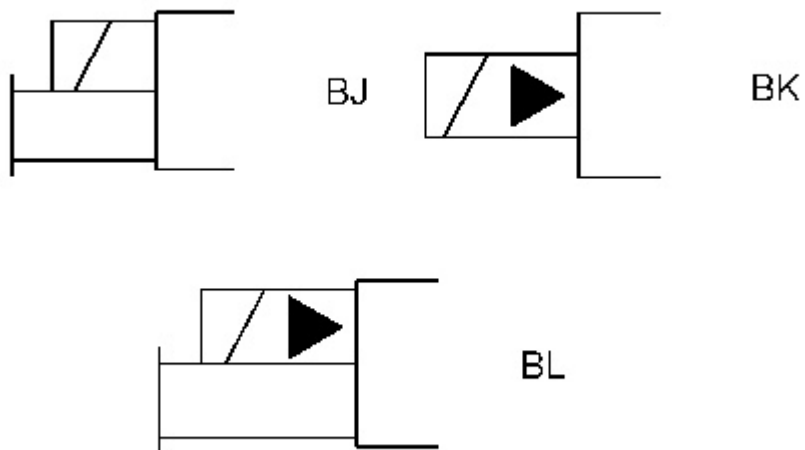
Illustration 16

g01353246

(BG) Spring loaded

(BH) Gas charged

Combination Controls



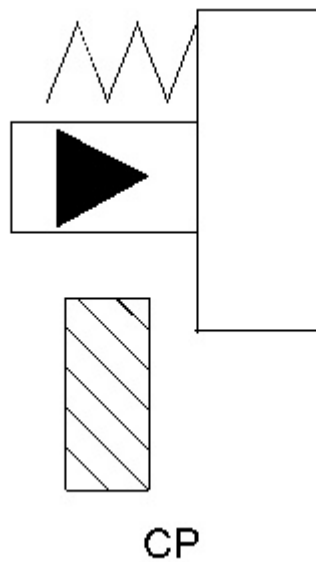


Illustration 18

g01629934

(CP) Connector (Mechanical Stop)

Electrical Controls

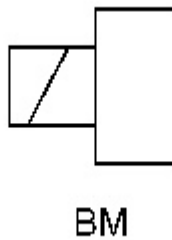


Illustration 19

g01353280

(BM) Solenoid

Miscellaneous Controls

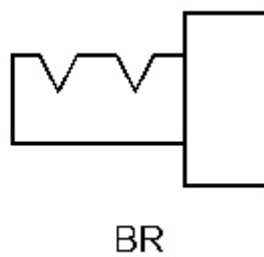
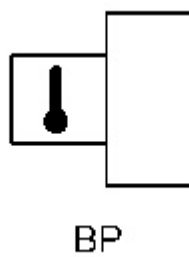
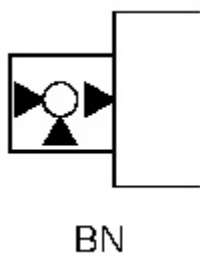


Illustration 20

g01820293

(BN) Servo

(BP) Thermal

(BR) Detent

Hydraulic, Pneumatic Cylinders

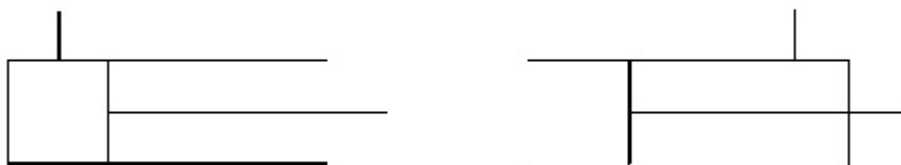


Illustration 21

g01353333

Single acting

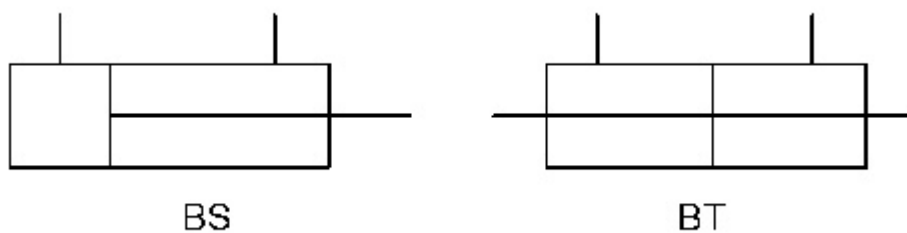


Illustration 22

g01387001

Double acting

(BS) Single end rod

(BT) Double end rod

Hydraulic Pumps



Illustration 23

g01820296

Fixed displacement

(BU) Unidirectional

(BV) Bidirectional

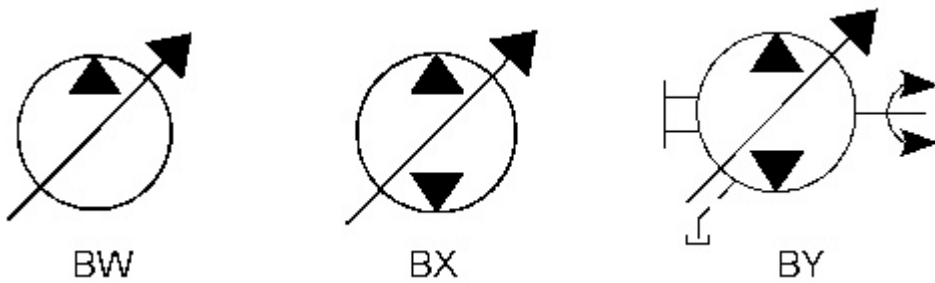


Illustration 24

g01820298

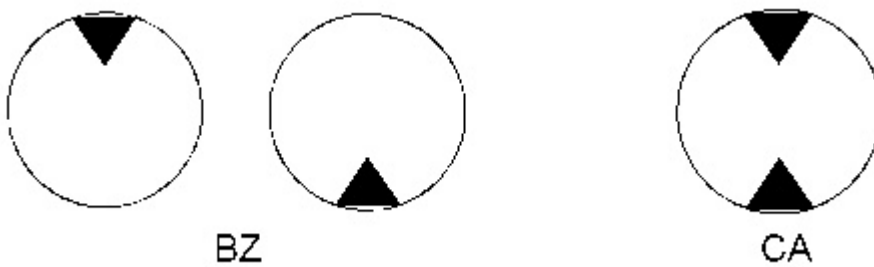
Variable displacement

(BW) Unidirectional

(BX) Bidirectional simplified

(BY) Bidirectional complete

Hydraulic Motors



(CA) Bidirectional

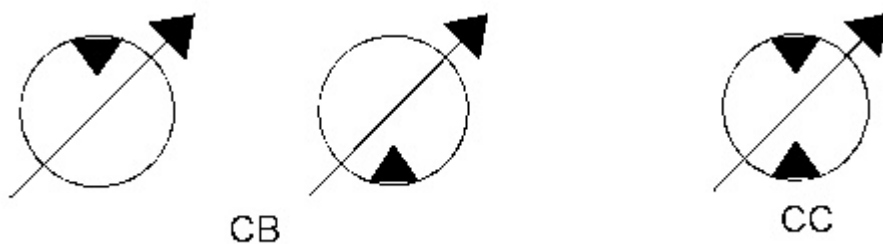


Illustration 26

g01820314

Variable displacement

(CB) Unidirectional

(CC) Bidirectional

Shutoff Valves

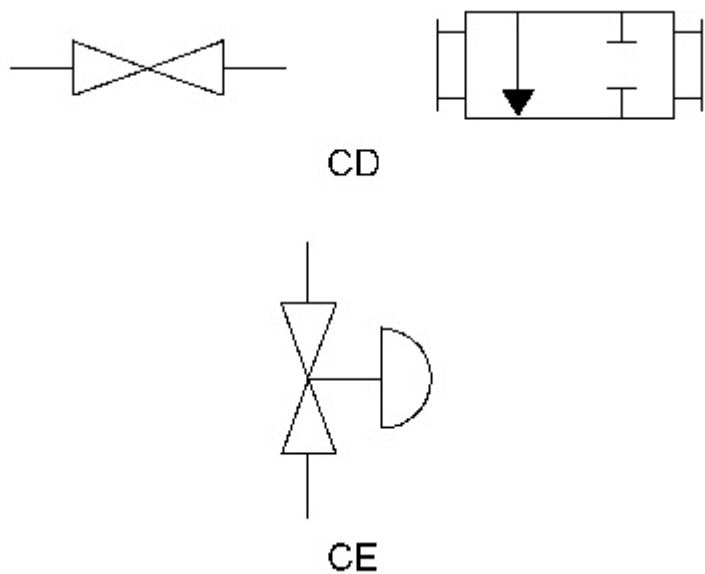


Illustration 27

g01820321

(CD) Basic symbols

(CE) Manual shutoff valve

One-Way Check Valves

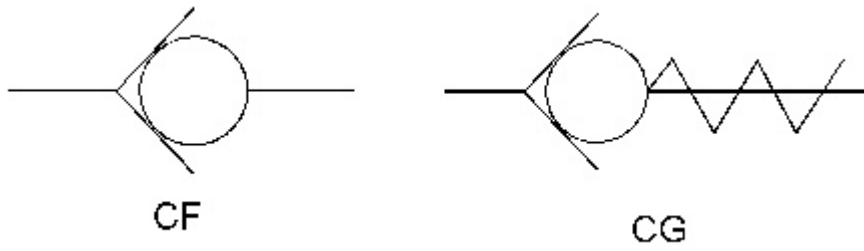


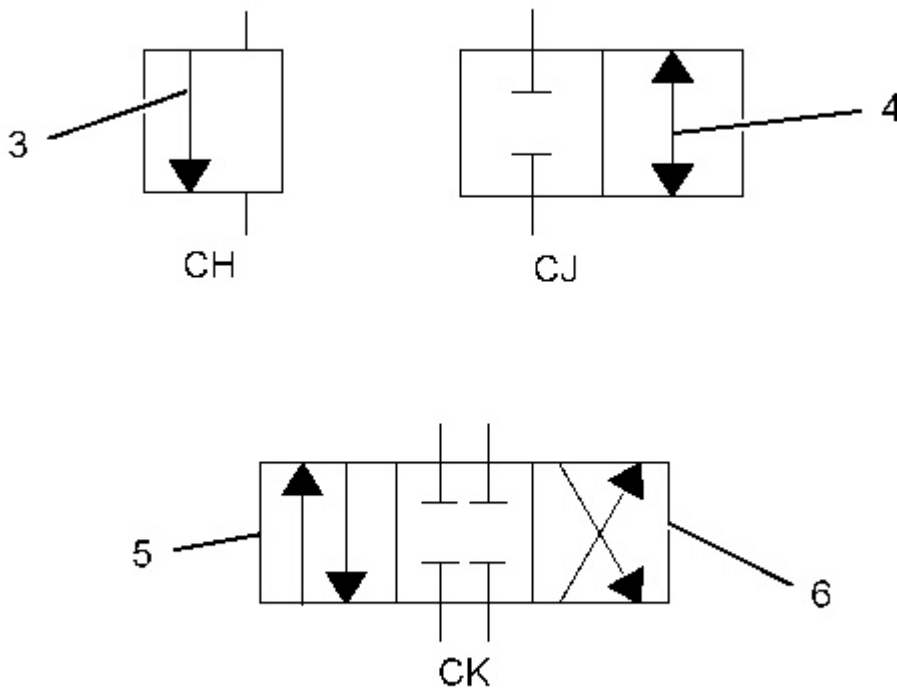
Illustration 28

g01353434

(CF) Basic symbol

(CG) Spring loaded

Internal Passageways



(5) Parallel flow

(6) Cross flow

Pressure Differential Valve

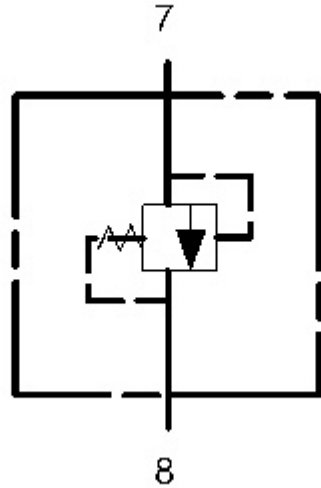


Illustration 30

g01358506

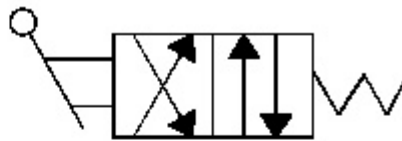
(7) Inlet (X psi)

(8) Outlet (Y psi)

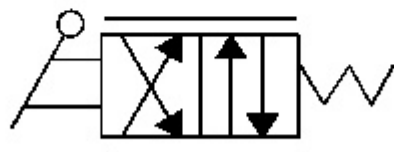
Control Valves



CL



CM



CN

Illustration 31

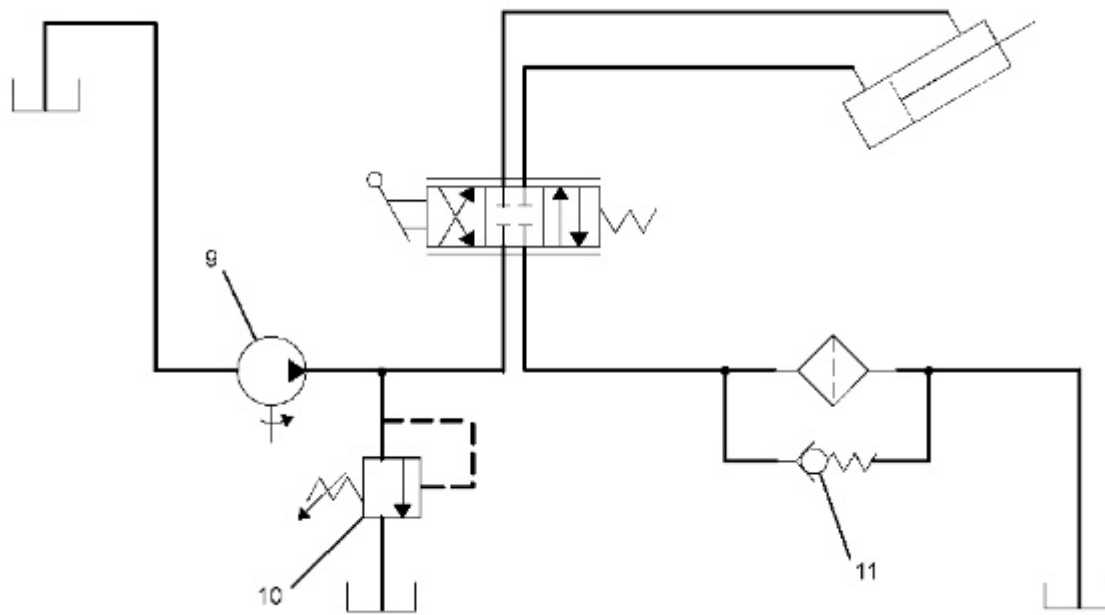
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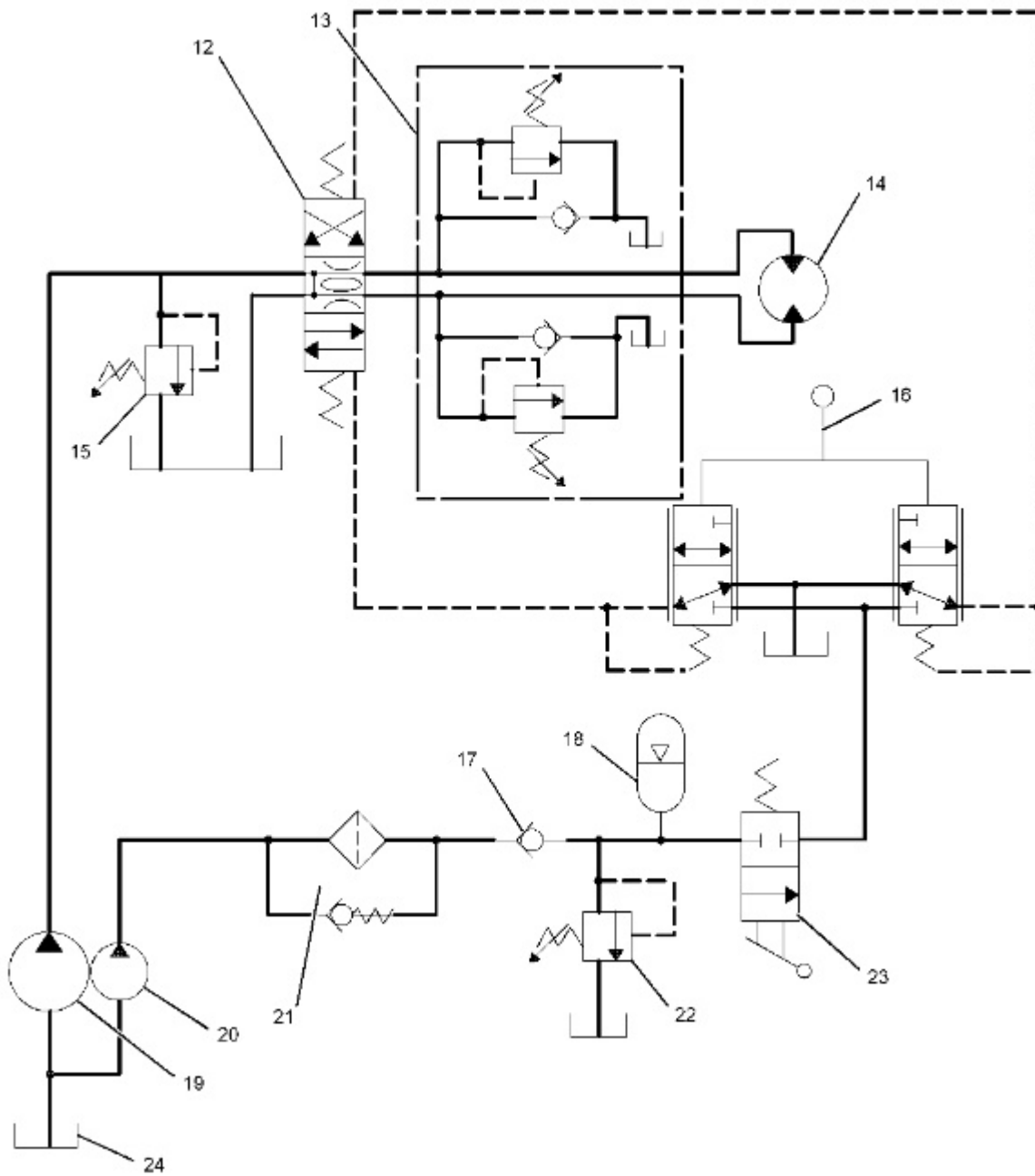
(CL) Normal position

(CM) Shifted position

(CN) Infinite Position

Simple Single Function Circuit





- (22) Pilot relief valve (2250 kPa (325 psi))
 - (23) Two positioned two-way pilot system disconnect valve
 - (24) Tank
-

◀ Product: 5''
Model: 5''
Configuration: 5''
MACHINE / ENGINE

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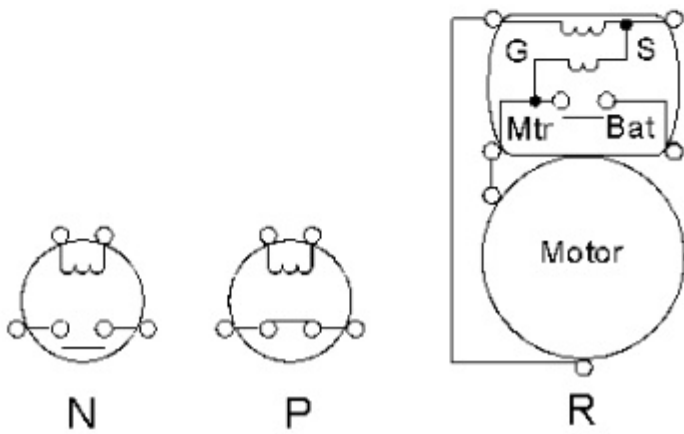
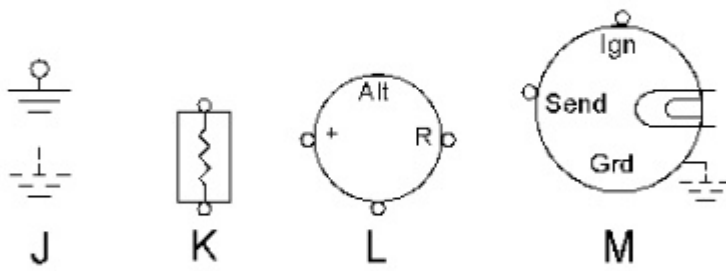
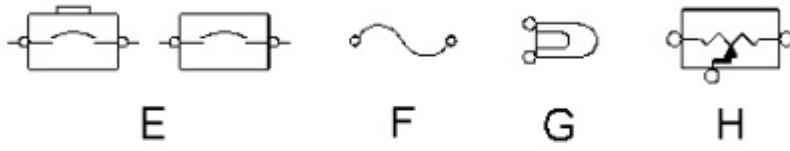
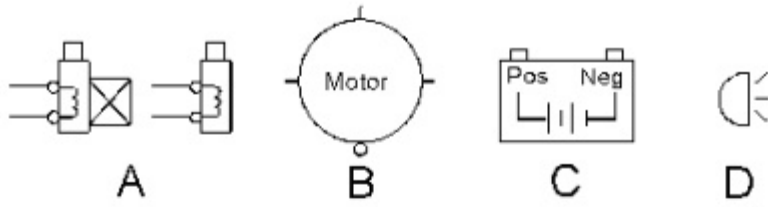
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Electrical Power Graphic Symbols

SMCS - 1400

Note: Use this module as a basic reference guide for graphic symbols. Do not use this module as a comprehensive reference guide.

Basic Component Symbols



(L) Alternator

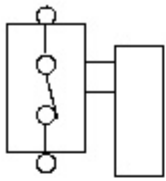
(M) Gauge

(N) Normally open relay

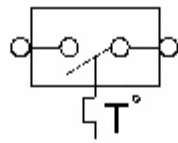
(P) Normally closed relay

(R) Starter

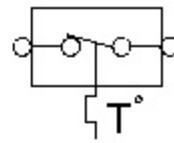
Switches



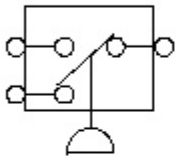
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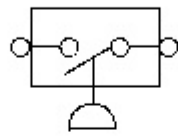
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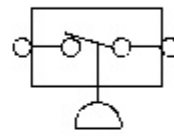
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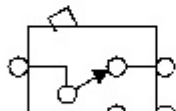
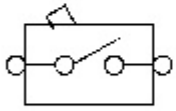
V



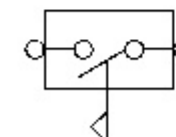
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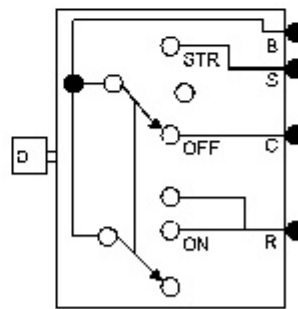
X



Y



Z



AA

- (W) Normally open pressure switch
- (X) Normally closed pressure switch
- (Y) Toggle switch
- (Z) Flow switch
- (AA) Key switch

Resistors

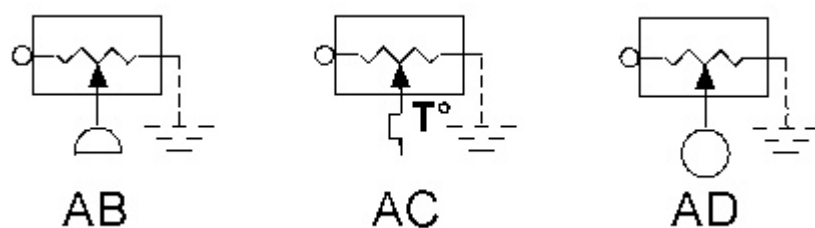


Illustration 3

g01390734

- (AB) Pressure resistor
- (AC) Temperature resistor
- (AD) Float resistor

Wire Coloring

- Red ... RD
- White ... WH
- Orange ... OR
- Yellow ... YL
- Pink ... PK
- Black ... BK
- Gray ... GY
- Purple ... PU
- Brown ... BR
- Green ... GN
- Blue ... BU

Wire Identification

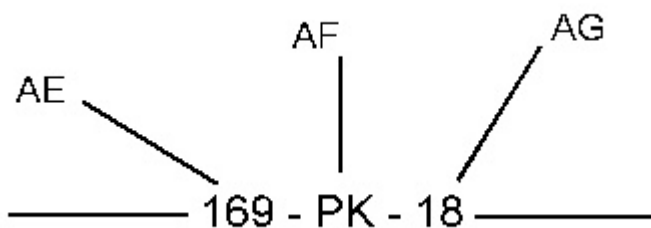


Illustration 4

g01409811

Old format

(AE) Wire label

(AF) Color code

(AG) Wire size

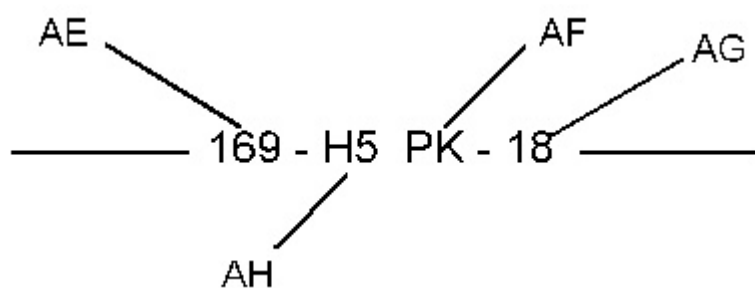


Illustration 5

g01409813

New format

(AE) Wire label

(AF) Color code

(AG) Wire size

(AH) Wire number 5 in harness "H"

Components

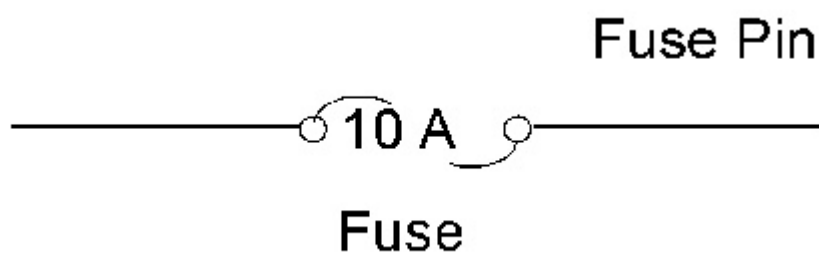


Illustration 6

g01409816

Old format

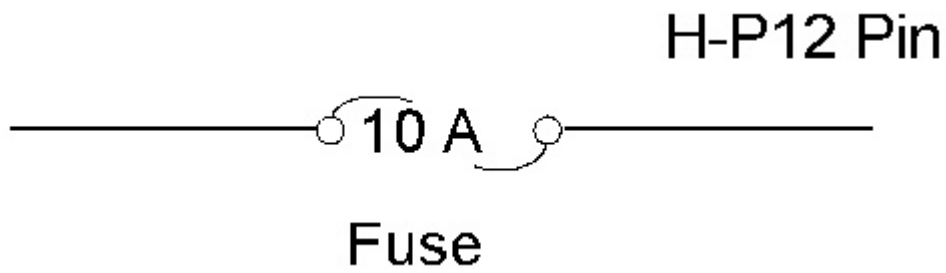


Illustration 7

g01409817

New format

Connectors

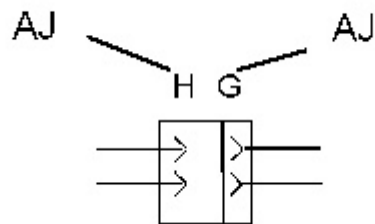
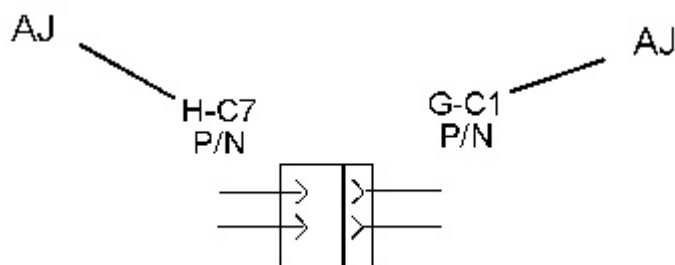


Illustration 8

g01409832

Old format

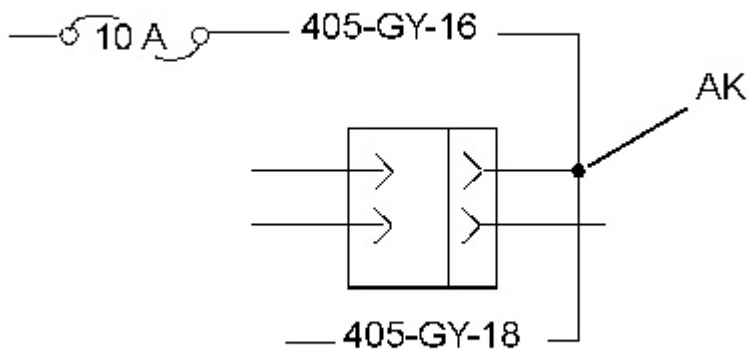
(AJ) Connector label



(AJ) Connector label

Note: "H" is the harness identification, "C" stands for the connector, and "P/N" is the receptacle connector part number.

Splices



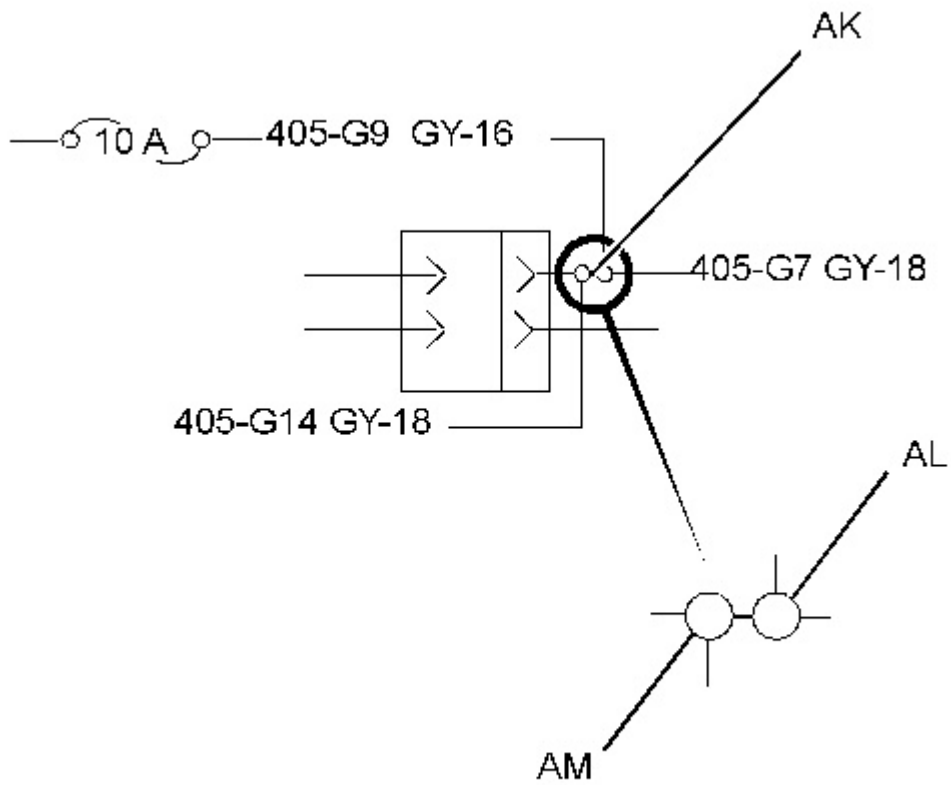


Illustration 11

g01409841

New format

(AK) Splice

(AL) Side 2 of the splice

(AM) Side 1 of the splice